

THE GOLDEN BOUGH.

The Golden Bough: A Study in Magic and Religion. By Prof. J. G. Frazer, D.C.L. Third edition. Part v.: "Spirits of the Corn and of the Wild." In 2 vols. Vol. i., pp. xvii+319. Vol. ii., pp. xii+371. (London: Macmillan and Co., Ltd., 1912.) Price, 2 vols., 20s. net.

AT the conclusion of his elaborate study of "Spirits of the Corn," Prof. Frazer observes that "while the fine flower of the religious consciousness in myth, ritual, and art is fleeting and evanescent, its simpler forms are comparatively stable and permanent, being rooted deep in those principles of common minds which bid fair to outlive all the splendid but transient creations of genius. It may be that . . . simple folk will still cherish the simple faiths of their nameless and dateless forefathers. . . ." In his feeling for the system he has studied so long and so minutely, the Darwin of religion resembles Ernest Renan, who came to regard affectionately the Christian and Pauline subjects of his analysis.

But a more interesting point is the suggestion that superstition "springs eternal in the human breast." If there is anything in the suggestion, it is that what we know as superstitious tendencies, crystallising into religious forms, are part of the mechanical workings of the human brain. For undoubtedly these multiple variations of a few simple ideas persist, just as they first developed, in subconscious or unconscious thought. It is only the primitive explanations of belief and ritual that show conscious exercise of the brain. From a similar point of view, Adolf Bastian has remarked the deplorable sameness and the small number of the conceptions of the human mind.

Such views and such prognostications seem to forget that mental action is relative to its object, that it varies in form as its knowledge of the object, and, consequently, that science can alter, and has altered, the "principles of common minds." And, after all, this rich crop of myth, ritual, and religion, so carefully harvested in "The Golden Bough," is but the chaff of man's imagination, however persuaded he may be that it is golden grain. For the true seeds of the mind are scientific; during countless ages they were garnered in absolute unconsciousness, fancy playing meanwhile with the flying chaff.

The mistake of regarding these recurrent and multitudinous expressions of man's mental "play" as the foundation of his individual and social achievements will not be made by the synthetic sociologist of the future. He will take the logical mechanism of the mind in its relation with increasing knowledge as the foundation, and

relegate the iridescent play of religion and superstition to the sphere of the imagination, as a part of æsthetics. But this "play," simultaneous with, or preceding, or following, mental adaptation to reality will be of value in determining the nature and quality of that adaptation. And the social psychologist needs no further material than that supplied in "The Golden Bough" and in "Totemism and Exogamy" for understanding the tendencies of the mind when free from scientific relations.

The discussion of "Spirits of the Corn and of the Wild" is the main stem of "The Golden Bough." Mannhardt's studies, which inspired it originally, have found a multiplex reincarnation. Besides the general extension of material there are interesting and valuable episodes, such as the connection of the Pleiades with agriculture, woman's part in agriculture, games in agriculture. A delightful essay on Empedocles as a pioneer of evolution and in comparison with Herbert Spencer shows the author's style at its best.

A. E. CRAWLEY.

SOME PHYSIOLOGICAL MONOGRAPHS.

- (1) *Schutzfermente des tierischen Organismus.* By Emil Abderhalden. Pp. xii+110. (Berlin: Julius Springer, 1912.) Price 3.20 marks.
- (2) *Les Parathyroïdes.* By L. Morel. Pp. iii+344. (Paris: A. Hermann et Fils, 1912.) Price 10 francs. (Questions Biologiques Actuelles.)
- (3) *Le Goût et l'Odorat.* By J. Larguier des Bancelles. Pp. x+94. Paris: A. Hermann et Fils, 1912.) Price 3.50 francs. (Questions Biologiques Actuelles.)
- (4) *The Physiology of Protein Metabolism.* By Dr. E. P. Cathcart. Pp. viii+142. (London: Longmans, Green and Co., 1912.) Price 4s. 6d. net. (Monographs on Biochemistry.)

(1) **P**ROF. EMIL ABDERHALDEN is probably about the busiest physiological investigator at the present day; he is certainly the most prolific writer. Not only do original papers flow in a steady stream from his laboratory, but he has also the time and energy to edit and write books. The work mentioned above is one of the most recent of these, and in it he collates the results of his own work and that of others on one of the most interesting developments of recent biochemical study. It deals with the protective mechanisms of the body, and especially with the part played by enzymes in resisting the effects of introducing foreign material into it. This is only part of the large subject included under the general heading of Immunity, but it is an important part. It is, for instance, well known that if "peptone"

is introduced into the blood-stream a very serious train of symptoms results which may terminate fatally. Healthy blood contains no enzymes capable of splitting peptone into its simpler and more harmless constituents. But by educating an animal by gradually introducing successively increasing doses of the poison, the blood acquires the property of dealing with it, owing to the genesis of peptolytic enzymes. This is only one example of the sort of thing which is continually occurring; many others are given, which the reader must discover for himself. The little book is valuable also because it deals clearly with the methods, especially the so-called "optical method," which have been elaborated by the author for the detection of the enzymes in question.

(2) The parathyroid glands were only discovered in 1880, and their importance in the life of the organism was not recognised until some years later. Removal of the thyroid body produces results analogous to those which occur when this organ is the seat of disease. Now that its neighbours, the parathyroids, have been recognised, much controversy has centred around the question as to how much of the effect is due to removal or disease of the latter bodies rather than of the thyroid itself. Much difference of opinion still prevails, but it is pretty generally admitted that what is known as tetany is a symptom rather of parathyroid than thyroid insufficiency. The main facts and views are set out with admirable lucidity in the second book mentioned above, and Dr. Louis Morel, the author, is to be congratulated, not only on having written such an interesting book, but on having added to it a valuable bibliography of the subject. This extends over nearly twenty closely printed pages in double columns, and seeing the recent date of our knowledge even of the existence of these little organs, we have an illustration of the industry of modern physiological and pathological investigators.

(3) The next monograph on our list is published in the same series, which is being published under the editorship of Prof. Dastre. In it, Dr. des Bancelles gives the most up-to-date information regarding the two special senses, taste and smell.

(4) Dr. Cathcart's contribution to the biochemical monographs which Messrs. Longmans are publishing deals with the important subject of protein metabolism. This also is enriched with an excellent bibliography. Although one must admire the way in which the author has placed before his readers all the latest information on the complex problems involved, one is naturally disappointed to find how many of these still continue in an uncertain state. That, however, is not Dr. Cathcart's fault, and we must rejoice that he

has himself done so much in the way of research to illuminate the dark places of scientific knowledge. It can only be a question of time and hard work before our difficulties in the interpretation of facts will disappear. W. D. H.

OUR BOOKSHELF.

Die Radiumkrankheit tierischer Keimzellen. Ein Beitrag zur experimentellen Zeugungs- und Vererbungslehre, by O. Hertwig. Pp. iii + 164 + Taf. i-vi. (Bonn: F. Cohen, 1911.) Price 8 marks.

THE author has planned and carried out a comprehensive series of experiments with a view to ascertain the effect of exposing to radium the ova and spermatozoa of animals, and of exposing the normal embryo in various stages of its development.

The axolotl and the frog (*Rana fusca*) were used in the experiments. The results show that exposure to radium leads, at every stage, to imperfect development of the embryo; numerous illustrations (in the text and in six special plates) show that inhibition of development and abnormal development are readily produced.

The book is divided into three parts; the first and second parts deal with experiments on amphibian ova and embryos; the third part with those of echinoderms.

The first part describes the results of irradiating fertilised ova at the beginning of segmentation, and the male reproductive cells before fertilisation. The second part describes the changes following exposure of the normal embryo at the several characteristic stages, such as the gastrula stage, the development of the nerve-plate, and of the spinal cord.

A number of microscopical sections are included in the illustrations to show the far-reaching nature of the changes produced by exposure to the rays of radium.

Antropologia Generale. Lezioni sull' Uomo secondo la Teoria dell'Evoluzione. By Prof. Enrico Morselli. 671 figs. + 1 plate + 3 maps. (Turin: Unione Tipografica, Editrice Torinese, 1901-1911.)

FROM 1887 until 1908 Prof. Morselli, who is by profession a physician, devoting himself to the study and cure of mental diseases, has been in the habit of delivering free courses of lectures on anthropology. The lectures, which have been in the course of publication, by instalments, for a number of years past, have now been completed, and form a work which represents a monument of patient and painstaking industry. In its conception and execution this work resembles the treatises which are so often produced by men attached to German universities.

Prof. Morselli's personality is never obtrusive: he seeks to express the facts as seen and rendered by others; he keeps his own opinions in the background. In the preface he acknowledges his indebtedness to Haeckel. "*Antropologia Generale*,"